REMARKS/ARGUMENTS

This is responsive to the Office Action dated November 17, 2004. The Examiner stated there was no abstract in the application. The application, being the National Phase of a PCT application, does in fact have an abstract. The PCT abstract is being retyped on a separate page attached to this amendment.

The Examiner rejected claim 6 on the ground that the phrase "30 cm of water column" is "not understood and does not seem to constitute standard pressure units". Attached are the title page, copyright page, and pages F-108, and F-318 from the CRC Handbook of Chemistry and Physics of 1982-1983. Note the highlighted portions. The submitted evidence establishes that centimeters of water column is a standard unit of pressure.

Claims 1, 4 and 8 have been rejected as being anticipated by Joers '048. Claims 2, 3 and 5-7 have been rejected as being obvious over Joers alone.

Claim 1 has been amended merely to make the patentable subject matter more explicit, without in fact narrowing the claim, and not for purposes of patentability. As amended claim 1 now recites "a mechanical, electronically controlled pulse generator housed in an inner casing and operable for generating pressure pulses having pulse characteristics adapted for treating Ménière's disease and similar conditions affecting the pressure balance between the various compartments of the internal ear ..." Thus, claim 1 now more clearly states that pulses are generated by a mechanism and applied to the ear of the patient for treating the noted medical conditions.

The Joers reference cannot disclose or suggest a transportable apparatus including a mechanical pulse generator and the other features recited in claim 1. The Joers reference discloses an electrical sound generator. The requirements for enclosing an electronic circuit as in the Joers device are entirely different from those involved in enclosing a mechanical, electronically controlled pulse generator according to the present invention. An electronic sound generating circuit, as is well known, can be tiny and lightweight. A mechanical pulse generator on the other hand must be able to move a certain amount of air in order to generate pulses for treating Ménière's disease and therefore is physically quite different from an electronic sound

generator. Moreover, sound is not used for treatment of the medical conditions noted in claim 1. Thus the Joers reference is simply irrelevant to the invention.

More specifically, Joers cannot suggest the inner casing having first (claim 1) and second (claim 2) portions, the outer casing, and the other structural features of the present claims. For at least this reason allowance of claim 1 is requested.

New claim 10 recites "said mechanical pulse generator comprising a first device for generating a static pressure level and a second device for causing a variation of that level in accordance with a predetermined program." Claim 10 is supported by the specification at page 6, lines 16-19, which incorporates WO 97/23178 as disclosing an example of the mechanical pulse generator that can be used with the present invention. WO '178 corresponds to US Patent 6,159,171. The claimed first device (13, 15, 17) and second device (14, 16, 18) are clearly disclosed in WO '178 in Figs. 1 and 2 and the corresponding text. The first and second pressure generating devices are distinct and separate from any sound generating device, such as the optional sonar pulse generator 27, which is not required for treatment of medical conditions.

New claim 9 depends from claim 1 and recites that the first portion of the first casing 1 is enclosed within a space defined by the outer casing 2, while the second portion of the first casing 1 extends beyond that space defined by the outer casing 2. This feature is seen Fig. 3 for example, wherein an upper part of the first casing 1 is enclosed within the outer casing 2 and defines the annular space 6; while on the other hand, a second portion of the first casing 1 projects downward below the second casing 2. The first and second portions of the first casing 1 define a compartment containing for example the control unit 17, the pressure generating unit 7, and the battery 23.

Regarding the structural features now recited in claim 9, as well as those in claims 2 and 3, the Examiner has simply denigrated these features as being obvious to the skilled designer, citing case decisions, but the Examiner's case citations are no substitute for a search for prior art. The cited cases, Nerwin v. Erlichman, 168 U.S.P.Q. 177, 179 (BPAI 1969) and In re Larson, 144 U.S.P.Q. 347 (CCPA 1965) are irrelevant. In Nerwin, the claims were directed to a camera and to a non-camera photographic apparatus. In Larson, the issue was an automobile brake. In neither case were the claims directed to a casing for enclosing a pulse generator. The Examiner

does not explain how the elements of a photographic apparatus and an automobile brake have any relevance to his argument that it would have been obvious to modify Joers' casing and obtain the subject matter of claims 2 and 3.

The "removable" structure of claim 2 and the "one-piece" structure of claim 3 both have useful features as described mainly on pages 3, 4, 5 and 8 of the specification. There is no art suggesting the features of claim 2 and 3 and no basis for the Examiner's idea that they are irrelevant and can be ignored or rejected without prior art.

The Examiner's case citations are no substitute for relevant prior art. Under the Examiner's theory, all improvement inventions would be obvious, merely because a modification of the prior art was once held in an unrelated case to have been obvious.

Prior art rejections require evidence, such as printed publications or an affidavit of the Examiner. 37 C.F.R. §1.104(d)(2); Graham v. John Deere, 383 U.S. 1, 17 (1966).

Even where a rejection is based on the ordinary level of skill in the art, evidence is required to establish that level of skill. In re Rouffet, No. 97-1492 (Fed.Cir. 1998); In re Fine, 5 USPQ 2nd 1596, 1598 (Fed.Cir. 1988); In re Kaplan, 229 USPQ 678, 683 (Fed.Cir.1986).

In view of the foregoing amendments and remarks, allowance of claims 1-10 is requested.

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Power — The time rate at which work is done. Units of power, the watt, one joule (ten million ergs) per second; the kilowatt is equal to 1000 watts; the horse-power, 33,000 foot-pounds per minute, is equal to 746 watts. Dimensions, $[m\, l^2\, t^{-3}]$. If an amount of work W is done in time t the power or rate of doing work is

$$P = \frac{W}{t}$$

Power will be obtained in watts if W is expressed in joules (10^7 ergs) and t in sec.

Power in watts for alternating current —

$$P = EI \cos \phi$$

where E and I are the effective values of the electromotive force and current in volts and amperes respectively and ϕ the phase angle between the current and the impressed electromotive force. The ratio,

$$\frac{P}{EI} = \cos \phi$$

is called the power factor.

Power developed by a direct current — The power in watts developed by an electric current flowing in a conductor, where E is the difference of potential at its terminals in volts, R its resistance in ohms, and I the current in amperes,

$$P = EI = RI^2$$

The work done in joules in a time t sec is,

$$W = EIt{:}RI^2 t.$$

Power ratios in telephone engineering are measured in decibels. The gain or loss of power expressed in decibels is ten times the logarithm of the power ratio. By reference to an arbitrarily chosen "power level" the actual power may be expressed in decibels. The numerical values thus used will not be proportional to the actual power level but roughly to the sensation on the ear produced when the electrical power is converted into sound. A difference of 1 decibel in the power supply to a telephone receiver produces approximately the smallest change in volume of sound which a normal ear can detect.

Pressure — Force applied to, or distributed, over a surface; measured as force per unit area. Cgs unit, the barye, one dyne per square centimeter. The megabarye is equal to 10^6 dynes per square centimeter. Pressure is also measured by the height of the column of mercury or water which it supports. Dimensions, $[m\, l^{-1}\, t^{-2}]$.

The pressure due to a force F distributed over an area A,

$$P = \frac{F}{A}$$

Absolute pressure — Pressure measured with respect to zero pressure.

Gauge pressure — Pressure measured with respect to that of the atmosphere.

Primary colors — Any three colors that when mixed in suitable proportions produce any color. Primary colors may be subtractive, where the primaries absorb colors from white light (e.g., magenta, cyan, yellow; red, blue, yellow) used in developing color photography; or additive, where the primaries form a color by the addition of their light (e.g., red, green, blue).

Principal focus of a lens or spherical mirror is the point of convergence of light coming from a source at an infinite distance.

Projectiles — For bodies projected with velocity v at an angle a above the horizontal, the time to highest point of flight.

$$t = \frac{v \sin a}{g}$$

Total time of flight to reach the original horizontal plane,

$$T = \frac{2v \sin a}{g}$$

Maximum height,

$$h = \frac{v^2 \sin^2 a}{2g}$$

Horizontal range,

$$R = \frac{v^2 \sin 2a}{g}$$

In the above equations the resistance of the air is neglected, g is the acceleration due to gravity.

Prompt neutrons — In nuclear fission, those neutrons released coincident with the fission process, as opposed to the neutrons subsequently released.

Proton — A positively charged subatomic particle having a mass of 1.67252×10^{-24} g, slightly less than that of a neutron but about 1836 times greater than that of an electron.

Proton-proton reaction — A thermonuclear reaction in which two protons collide at very high velocities and combine to form a deuteron. The resultant deuteron may capture another proton to form tritium and the latter may undergo proton capture to form helium.

Proton storm — The flux of protons sent into space by a solar flare.

Pulsed laser — A laser that radiates its energy during short bursts of times (pulses) and then is inactive until the next burst or pulse. The frequency of these pulses is called the pulse repetition frequency (PRF) of the laser.

Purkinje effect — A phenomenon associated with the human eye, making it more sensitive to blue light when the illumination is poor (less than about 0.1 lumen/ft^2) and to yellow light when the illumination is good.

Pyron — A unit of radiant intensity of electromagnetic radiation equal to 1 calorie/cm^2/min.

Quality or timbre of sound depends on the coexistence with the fundamental of other vibrations of various frequencies and amplitudes.

Quantity of electricity or charge — The electrostatic unit of charge, the quantity which when concentrated at a point and placed at unit distance from an equal and similarly concentrated quantity, is repelled with unit force. If the distance is one centimeter and force of repulsion one dyne and the surrounding medium a vacuum, we have the electrostatic unity of quantity. The electrostatic unit of quantity may be defined as that transferred by electrostatic unit current in unit time. The quantity transferred by one ampere in one second is the coulomb, the practical unit. The faraday is the electrical charge carried by one gram equivalent. The coulomb = 3×10^9 electrostatic units. Dimensions, $[\epsilon^{1/2}\, m^{1/2}\, l^{3/2}\, t^{-1}]$; $[\mu^{-1/2}\, m^{1/2}\, l^{1/2}]$.

Quantum — Unit quantity of energy postulated in the quantum theory. The photon is a quantum of the electromagnetic field, and in nuclear field theories, the meson is considered to be the quantum of the nuclear field.

Quantum theory — The theory first stated by Max Planck (before the Physical Society of Berlin on December 14, 1900) that all electromagnetic radiation is emitted and absorbed in quanta, each of magnitude hv, h being the Planck constant and v the frequency of the radiation.

Quasi-monochromatic — Nearly of the same wavelength (see monochromatic).

Rad — An ionizing radiation unit corresponding to an absorption of energy in any medium of 100 ergs/g (1 rad in tissue = 100/93 rep).

Radar — A system of radio detection and ranging which detects objects by beaming rf pulses that are reflected back by the object and measures its distance by the time elapsed between transmission and reception. The strength of the echo signal is determined by the radar equation

$$W_R = W_T \frac{G^2 \lambda^2 \sigma}{(4\pi)^3 R^4}$$

where W_R is received echo power. W_T is transmitted power, G is antenna gain, λ is radar carrier wavelength, σ is target cross section, and R is range.

To convert from	To	Multiply by
Hours (sidereal)	Minutes (sidereal)	60
Hundredweights (long)	Kilograms	50.802345
"	Pounds	112
"	Quarters (Brit., long)	4
"	Quarters (U.S., long)	0.2
"	Tons (long)	0.05
Hundredweights (short)	Kilograms	45.359237
"	Pounds (advp.)	100
"	Quarters (Brit., short)	4
"	Quarters (U.S., short)	0.2
"	Tons (long)	0.044642857
"	Tons (metric)	0.045359237
"	Tons (short)	0.05
Inches	Ångström units	2.54×10^8
"	Centimeters	2.54
"	Chains (Gunter's)	0.00126262
"	Cubits	0.055555
"	Fathoms	0.013888
"	Feet	0.083333
"	Feet (U.S. Survey)	0.083333167
"	Links (Gunter's)	0.126262
"	Links (Ramden's)	0.083333
"	Meters	0.0254
"	Mils	1000
"	Picas (printer's)	6.0225
"	Points (printer's)	72.27000
"	Wave length of orange-red line of krypton 86	41929.399
"	Wave length of the red line of cadmium	39450.369
"	Yards	0.027777
Inches of Hg (32°F.)	Atmospheres	0.0334211
"	Bars	0.0338639
"	Dynes/sq. cm	33863.9
"	Ft. of air (1 atm., 60°F.)	926.24
"	Ft. of H_2O (39.2°F.)	1.132957
"	Grams/sq. cm	34.5316
"	Kg./sq. meter	345.316
"	Mm. of Hg (60°C.)	25.4
"	Ounces/sq. inch	7.85847
Inches of Hg (32°F.)	Pounds/sq. ft	70.7262
Inches of Hg (60°F.)	Atmospheres	0.0333269
"	Dynes/sq. cm	39768.5
"	Grams/sq. cm	34.4343
"	Mm. of Hg (60°F.)	25.4
"	Ounces/sq. inch	7.83633
"	Pounds/sq. ft	70.5269
Inches of H_2O(4°C.)	Atmospheres	0.0024582
"	Dynes/sq. cm	2490.82
"	In. of Hg (32°F.)	0.0735539
"	Kg./sq. meter	25.3993
"	Ounces/sq. ft	83.2350
"	Ounces/sq. inch	0.578020
"	Pounds/sq. ft	5.20218
"	Pounds/sq. inch	0.03612628
Inches/hr	Cm./hr	2.54
"	Feet/hr	0.0833333
"	Miles/hr	1.578282×10^{-5}
Inches/min	Cm./hr	152.4
"	Feet/hr	5
"	Miles/hr	0.000946969
Joules (abs.)	B.t.u	0.000948451
" "	B.t.u. (IST.)	0.000947831
" "	B.t.u. (mean)	0.000947088
" "	Cal., *gm*	0.239006
" "	Cal., *gm.* (IST.)	0.238849
" "	Cal., *gm.* (mean)	0.238662
" "	Cal., *gm.* (15°C.)	0.238903
" "	Cal., *gm.* (20°C.)	0.239126
Joules (abs)	Cal., *kg.* (mean)	0.000238662
" "	Cu. ft.-atm	0.000348529
" "	Ergs	1×10^7
" "	Foot-poundals	23.730360
" "	Foot-pounds	0.737562
" "	Gram-cm	10197.16
" "	Hp.-hours	3.72506×10^{-7}
" "	Joules (Int.)	0.999835
" "	Kg.-meters	0.1019716
" "	Kw.-hours	2.7777×10^{-7}
" "	Liter-atm	0.00986895
" "	Volt-coulombs (Int.)	0.999835
" "	Watt-hours (abs.)	0.0002777777
" "	Watt-hours (Int.)	0.000277732
" "	Watt-sec	1
" "	Watt-sec. (Int.)	0.999835
Joules (Int.)	B.t.u	0.000948608
"	B.t.u. (IST.)	0.000947988
"	B.t.u. (mean)	0.000947244
"	Cal. *gm*	0.239045
"	Cal., *gm.* (IST.)	0.238888
"	Cal., *gm.* (mean)	0.238702
"	C.h.u	0.000527004
"	C.h.u. (IST.)	0.000526660
"	C.h.u. (mean)	0.000526247
"	Cu. cm.-atm	9.87086
"	Cu. ft.-atm	0.000348586
"	Dyne-cm	1.000165×10^7
"	Ergs	1.000165×10^7
"	Foot-poundals	23.73428
"	Foot-pounds	0.737684
"	Gram-cm	10198.8
"	Joules (abs.)	1.000165
"	Kw.-hours	2.77824×10^{-7}
"	Liter-atm	0.00987058
"	Volt-coulombs	1.000165
"	Volt-coulombs (Int.)	1
"	Watt-sec	1.000165
"	Watt-sec. (Int.)	1
Joules/(abcoulomb × °F.)	Joules/(coulomb × °C.)	0.18
Joules/amp.-hr	Joules/abcoulomb	0.002777
"	Joules/statcoulomb	9.265653×10^{-14}
Joules/coulomb	Joules/abcoulomb	10
"	Volts	1
Joules/(coulomb × °F.)	Joules/(coulomb × °C.)	1.8
Joules/°C	B.t.u./°F	0.000526917
"	Cal., *gm.*/°C	0.239006
"	Cal., *gm.* (mean)/°C	0.238662
Joules/electronic charge	Joules/abcoulomb	6.24196×10^{19}
Joules/(electronic charge × °C.)	Joules/(coulomb × °C.)	6.24196×10^{18}
Joules/(gram × °C.)	B.t.u./(lb. × °F.)	0.239006
"	Cal., *gm.*/(gram × °C.)	0.239006
Joules (Int.)/(gram °C.)	B.t.u./(lb. × °F.)	0.239045
"	Cal., *gm.* (mean)/(gram × °C.)	0.238702
Joules/sec. (abs.)	B.t.u./min	0.0569071
"	Cal., *gm.*/min	14.3403
"	Cal., *kg.*/min	0.0143403
"	Cal., *kg.* (mean)/min	0.0143197
"	Dyne-cm./sec	1×10^7
"	Ergs/sec	1×10^7
"	Foot-pounds/sec	0.737562
"	Gram-cm./sec	10197.16
"	Horsepower	0.00134102
"	Watts	1
"	Watts (Int.)	0.999835
Joules (Int.)/sec	B.t.u./min	0.0569165